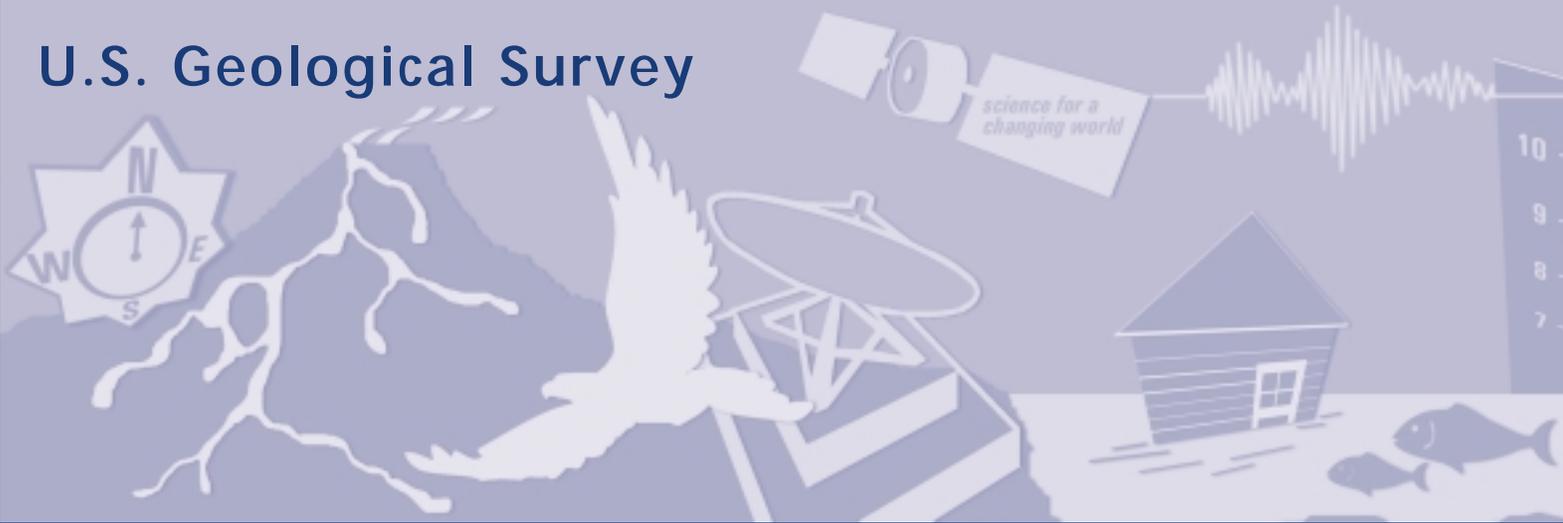


Annual Performance Plan 2001

Annual Performance Report 1999

U.S. Geological Survey



DEPARTMENT OF THE INTERIOR

U.S. Geological Survey
Annual Performance Plan FY 2001
Annual Performance Report FY 1999



DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

I am pleased to present our first consolidated performance report and plans for the U.S. Geological Survey (USGS) for FY 1999-2001.

Capitalizing on our experience and actual accomplishments in FY 1999, we have developed annual performance plans that will advance us toward achieving our revised strategic plan for FY 2000 – 2005. Our plans build on our proud 120-year history of impartial scientific excellence. They reflect a renewed commitment to meeting the needs of our partners and customers, and they endeavor to deliver relevant and useable science in time to make a difference. To ensure this happens, we are cultivating an atmosphere of innovation and creativity — one that will foster and reward the broad-scale, integrated science I believe is needed by decision-makers and the public.

We will also focus our organizational and management structure — and our use of time, people, and financial resources — on keeping science first. Streamlined business practices, enhanced regional leadership, insightful collaboration among disciplines, and an evolving culture of accountability are the foundation of those efforts. Together we will build a USGS that is well positioned for the future and better prepared to provide science for a changing world.

A handwritten signature in black ink, appearing to read "Charles Groat".

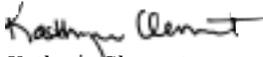
Charles Groat
Director

U.S. Geological Survey Executive Leadership Team

The employees of the U.S. Geological Survey (USGS) support the goals and objectives of the Government Performance and Results Act (GPRA), and are committed to transforming USGS into a responsive and performance oriented agency. In accordance with GPRA, this Annual Plan has been prepared to advance the long-term goals of our revised Strategic Plan. We, the undersigned members of the USGS Executive Leadership Team, are responsible for successful implementation of our Strategic and Annual Plans:



Dr. Charles Groat
Director



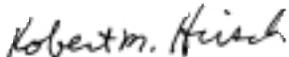
Kathryn Clement
Deputy Director



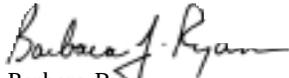
Martin Eckes
Chief
Budget and Organization Analysis



Barbara Wainmans
Chief
External Affairs



Robert Hirsch
Associate Director for Hydrology



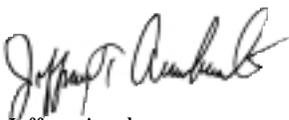
Barbara Ryan
Associate Director for Operations



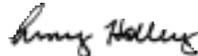
Bonnie McGregor
Eastern Regional Director



John D. Buffington
Western Regional Director



Jeffrey Armbruster
Acting Chief
Human Resources



Amy Holley
Senior Advisor to the Director



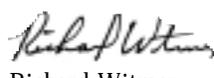
Anne Kinsinger
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Dennis Fenn
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Patrick Leahy
Associate Director for Geology



Richard Witmer
Associate Director for Geography



Thomas Casadevall
Central Regional Director



James Leupold
Chief
Office of Program Support



Kenneth Lanfear
Acting Geographic Information Officer

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Executive Summary

Since joining the USGS in November 1998, Director Charles Groat has emphasized that integrating science is the key to its relevance in a changing world. As we seek to more completely integrate the research of our various disciplines, we will strive to respect the expertise from each discipline and present a balanced view of the issues involved. High quality, objective, credible research and information are our most important products, and our science must be communicated and widely used if we wish to be considered successful. The Director's theme — **ONE BUREAU, ONE MISSION** — looks to a more vibrant, more robust, and more relevant earth and life science agency. A Strategic Change team, co-chaired by the Director, and focus groups involving more than 200 employees worked together from September through December 1999 to define the actions needed to make USGS sleeker, stronger and more flexible. The Director is restructuring the bureau and redefining our business practices to ensure that USGS is positioned to be a world leader in the natural sciences. We will not only provide the discipline-based and integrated science on which people have come to depend, but also enhance our tradition of excellence by increasing our ability to work on large regional natural resource problems and more effectively draw on the full breadth of scientific capability available within the USGS.

We are ready to make the changes necessary as we begin this new century, with a revised Strategic Plan for FY 2000-2005 to guide our efforts. Modified to more clearly represent our goals and strategies and to reflect stakeholder feedback received through our consultation process, the revised Strategic Plan is vital to accomplishing change. Critical to monitoring our progress in achieving our strategic direction are the annual performance targets and measures presented in this annual plan. USGS is defining the roles and responsibilities of

Regional and Associate Directors in ensuring that performance metrics are collected, evaluated, and achieved at appropriate levels in the bureau and that performance data are verified and validated.

Among the Director's highest priorities is making significant progress toward a real-time hazards warning system. For FY 1999, USGS met or exceeded all performance targets for achieving this end. Increased funding appropriated in FY 2000 and proposed for FY 2001 will accelerate achievement of the real-time components of the **Hazards** long-term goal. In addition, our experience in tracking and reporting performance data during the year, our commitment to using these data for management purposes, and our efforts to validate the measures have improved our ability to measure the delivery of real-time flood data. New performance measures will be in place for FY 2000 performance tracking.

Acting on the Director's message to more effectively communicate science and draw upon the full breadth of our scientific capability, we substantially exceeded our FY 1999 **Environment and Natural Resources** performance targets for analyses, decision support systems, and stakeholder meetings. In fact, we more than doubled our targets related to stakeholders by meeting with them to obtain program feedback, share current knowledge, and identify opportunities for partnerships. The information gathered and relationships fostered positioned us to better identify the science needs and form the plans to address the large regional natural resource problems we are proposing initiatives for in FY 2001. We are also planning to continue improving the communication of our science information in FY 2001, with several initiatives focused on integrating long-term databases and enhancing network speed, security and capacity to deliver the data. While aggregate performance targets are provided in this Plan, the

increments associated with each initiative are provided in the FY 2001 President's Budget.

The single performance target that we failed to meet in FY 1999, our university-based partnerships, resulted from the nature of the work that was conducted and from effectively streamlining how we issued the research work orders by whole project rather than by individual phases. FY 2000 and 2001 targets reflect the new process. Performance measure validation efforts during FY 2000 will determine the appropriateness of this metric as well as others in providing an accurate view of the performance of our programs.

Quality science that is both relevant to a changing world and effectively communicated is our most important product. We will continue to measure its quality and relevance through peer reviews and program evaluations. By embarking on a systematic survey of customer satisfaction with our products and services, we will renew our commitment to accountability. We believe that our leadership and our plan will allow us to meet the challenges of the new century with renewed vigor and a clarified sense of purpose and mission.

About This Document

The Government Performance and Results Act (GPRA) requires agencies to submit annual performance plans to Congress with their fiscal year budget request, and to prepare an annual performance report at the end of each fiscal year (FY) on how well they met their goals. The FY 1999 Annual Performance Plan was the Department of the Interior's first official plan submitted to Congress, and the FY 1999 Annual Performance Report is Interior's first opportunity to report on our accomplishments.

Rather than preparing a separate FY 1999 Annual Performance Report (Report), the Department of the

Interior (DOI) has combined the FY 1999 Report with the FY 2001 Annual Performance Plan (Plan). We believe this consolidated plan and report will be more useful to Congress and the appropriations process than submitting a FY 2001 Plan with the budget in February 2000, followed by a separate FY 1999 Report submitted at the end of March 2000. In this consolidated document we present our accomplishments for FY 1999, what we plan to accomplish in the current fiscal year, FY 2000, and what we propose to accomplish in FY 2001 with the budget resources we are requesting. In a single presentation, the reader can see the trends in our performance targets along with the trends in our results.

Section I

Introduction and Overview

1.1 INTRODUCTION

What we do

The U.S. Geological Survey (USGS) provides science for a changing world by delivering reliable and impartial information that describes the Earth, its natural processes, and its natural species. This information is used by emergency response organizations, resource managers, planners, and other customers to: minimize loss of life and property from natural disasters; manage water, biological, energy, and mineral resources; and enhance and protect our quality of life. The USGS is at work in every State of the Nation and in dozens of foreign countries, cooperating with more than 2,000 organizations to provide information for resource managers in the public and private sectors. Our strengths, which rely on our reputation for objectivity and scientific excellence, as well as a strong heritage of collegial relationships and partnerships with the customers we serve, include a multidisciplinary workforce capable of working anywhere in the world; the ability to develop, design, and maintain long-term national and international databases; and the capability to conduct long-term, broad-scale, multidisciplinary, and interpretive studies.

Better Positioned to Deliver Science

USGS primary science disciplines include the following:

- biological resources (information critical to biological species management, animal health, ecosystems, and invasive species);
- geology (information relating to energy and mineral resources; natural hazards such as landslides, volcanoes, and earthquakes; and geologic processes that affect our Nation's land and coasts);
- geography (geospatial data, topographic maps, and satellite images); and

- water resources (real-time flood data and water quality and quantity information on surface and ground-water resources).

Our strategic and annual performance targets focus on the **provision** of science to customers in support of solving the Nation's complex land and resource management problems and minimizing the loss of life and property from natural disasters. Our division-centered, discipline-focused, culture hampers multidisciplinary efforts to integrate science and advance its relevance to societal needs. We are initiating strategic changes that focus on creating an organization with the infrastructure to enable integrated science in terms of operational processes and practices; communications; information technology; a common understanding of our customers and their needs; and investing in and rewarding our people. The most important changes that we are going to make relate to common business practices, leadership, program planning, and customers.

Common Business Practices: Our top short-term priority in streamlining USGS functions is to adopt and implement a bureau-wide infrastructure that will facilitate uniform administrative, program development, and science support systems across divisions, regions, and programs. We will remove barriers that hinder collaboration among our scientists across division lines and provide incentives for participation in collaborative and integrated programs at the bureau level.

Leadership: Our leadership structure will be altered somewhat to ensure better distribution of leadership in both the administrative and scientific arenas. The science leaders of the bureau are the Associate Directors for Biology, Geography, Geology, and Hydrology. Empowering regional leadership is a top priority in strengthening the programs that meet local and region-

al customer needs. While Associate Directors will have oversight of national programs, the regional aspects of these programs will be overseen by the regional leadership to ensure specific needs are being met. We will institute a matrix management approach that gives Regional Directors and Regional Executives, in collaboration with Associate Directors, substantial authority over regional programs and funding for them. Regional Executives will be distributed to interact with customers and meet program and facilities oversight needs.

Program Planning: Associate Directors have the lead role in science program development and formulation of future science directions, participating in a consolidated and coordinated planning process at the bureau level. Regional Directors also participate in this critical function. Having both Regional and Associate Directors involved in the process is essential to meeting the science and customer goals in our Strategic Plan. This new process has already contributed to the formulation of the FY2001 budget proposal and will more fully influence the development of the FY2002 programs.

Customers: Our Strategic Plan places high priority on meeting our customers' needs. Therefore, each Associate Director will have added responsibilities for engaging customers at the national level, and Regional Directors will be responsible for meeting with customers on the regional level to ensure that needs are being met. As we enter into new partnerships, we will examine the dynamics of the relationship to continue to ensure that organizational and personal conflict of interest issues are considered, evaluated, and resolved. Honesty and integrity in all aspects of our scientific enterprise, maintaining our impartiality, and ensuring that our information and products are used to benefit the public as a whole will continue to be hallmarks of USGS science.

Science Performance Measurement and GPRA

USGS research is peer-reviewed and our programs are cyclically evaluated to ensure the quality and timeliness of our science. This approach is validated in the recommendations of the National Academy of Science report on Research and the Government Performance and Results Act that was released February 17, 1999, and is consistent with the September 1998 report by the

SOUTH FLORIDA RESTORATION SCIENCE FORUM MAY 1999

Primary hosts: USGS and the South Florida Water Management District

Highlighting the connection between science and resource management for the South Florida restoration effort, this forum served as a model for similar landscape-scale restoration projects across the Nation. "You could visit and learn about nearly every facet of scientific research - from Panther tracking to looking at Periphyton algae through a microscope," said Truman Eugene (Gene) Duncan, Director of Water Resources for the Miccosukee Tribe. "Actual researchers were on hand in each room to answer questions of the managers. In my opinion, the very fact that the researchers were able to talk one-on-one with the managers accomplished the goal of improving the linkage between science and resource management."

House Science Committee Toward a New Science Policy that states...in general, R&D in Federal agencies should be highly relevant to, and tightly focused on, agency or department missions.

The Academy report endorses a three-pronged "expert review" of Federal science, addressing quality, relevance, and leadership. USGS engages in reviews and evaluations that meet these accountability criteria for the research we produce.

- Peer review has been the quality standard for USGS scientific publications and a documented component of USGS policy throughout our history.
- To assess the relevance of our products to their needs, USGS is collecting information from customers by survey, as described in the Customer Service section 3.1., and by periodic review of our programs with stakeholders, including user forums to which the public is invited. Further, a DOI-wide process is being implemented to ensure that the highest priority science needs of the DOI are being met by USGS programs — again ensuring the relevance of USGS science to support DOI land and resource management policy and decisionmaking.

- Leadership issues are addressed in formal, external, independent program evaluations such as
 - the National Academy of Public Administration’s studies which resulted in a 1998 report *Geographic Information for the 21st Century: Building a Strategy for the Nation*, and a 1999 report on *Human Resources Roles and Responsibilities*
 - the National Research Council’s reviews of the Energy Resources Program and Coastal and Marine Geology Program released in 1999, and
 - the current 18-month review by the National Research Council of USGS strategic direction.

1.2 MISSION STATEMENT

Strategic Direction

The USGS will combine and enhance our diverse programs, capabilities, and talents and increase customer involvement to strengthen our science leadership and contribution to the resolution of complex issues.

Vision

The USGS is a world leader in the natural sciences through our scientific excellence and responsiveness to society’s needs.

Mission

The USGS serves the Nation by providing reliable scientific information to:

- describe and understand the Earth;
- minimize loss of life and property from natural disasters;
- manage water, biological, energy, and mineral resources; and
- enhance and protect our quality of life.

1.3 LINKAGE TO BUREAU STRATEGIC PLAN AND DEPARTMENTAL GOALS

The U.S. Geological Survey Strategic Plan has two mission goals —

- Hazards, and
- Environment and Natural Resources.

Each mission goal or GPRA Program Activity has an associated long-term goal that identifies target performance levels and time frames of performance for the Strategic Plan. Each of the Strategic Plan’s long-term goals has one associated annual goal that identifies the annual performance increment necessary to achieve the long-term goal as well as any proposed changes resulting from program and budget initiatives. Each annual goal has five numeric performance measures — a total of ten for the entire Annual Plan. “Stakeholder meetings” are identified as performance measures for each of the annual goals to capture follow-through on the strategic direction’s focus on “increased customer involvement to strengthen our science leadership and contribution to the resolution of complex issues.” Each annual goal also has a milestone to measure customer satisfaction with key USGS science product categories: establishing baseline in FY 2000 and defining improvement targets in the revised final FY 2001 plan. The new customer satisfaction measure will increase the number of numeric performance measures to 12.

As the science bureau of the Department of the Interior, USGS provides information and technologies that are critical to the mission achievement of Department land and resource management bureaus. USGS and the resource management bureaus of DOI have formalized a process to provide USGS science support to the DOI bureaus that will eventually provide input to USGS for defining GPRA metrics and outcomes. USGS mission and long-term goals directly support the Department of the Interior Goal # 4, “Provide Science for a Changing World,” but contribute to all of the DOI goals by focusing on the provision of scientific information to support these efforts.

1.4 LINKAGE TO BUDGET

The GPRA Program Activity concept captures the contribution of all program activities to a common mission requirement by applying a single set of annual goals and performance measures across four current Program and Finance (P&F) schedules — National Mapping Program (08040001), Geologic Hazards, Resources and Processes (08040002), Water Resources Investigations (08040003), and Biological Research (08040004). The

USGS's remaining two P&F schedules — Science Support (08040005) and Facilities (08040006) — support all programmatic activities and their funding has been distributed on a prorata basis to the two GPRA Program Activities (Hazards and Environment and Natural Resources).

The FY 2000 budget consolidated the appropriated facilities and general administration costs into bureau-wide accounts to improve accountability for all aspects of the organization and promote common business practices. The result is a much clearer view of the funding available for science. The approved FY 2000 budget structure does not include the proposed new Integrated Science activity, and FY 2000 revised final performance targets have been redistributed to reflect the restoration of funds to their former P&F line items.

Budget activities and subactivities linked to these GPRA Program Activities are identified in **Section II, GPRA PROGRAM ACTIVITIES AND GOALS**. Performance targets are aggregated as a total for the Bureau for each GPRA Program Activity. Performance targets are disaggregated by budget activity in the President's Budget request.

Long-term goal performance targets assume continued funding at the FY 2000 level. Annual performance for FY 1999 shows actual achievements with the enacted funding level. Targets set for FY 2000 reflect the enacted funding level less the across-the-board reduction, and targets for FY 2001 reflect presidential priorities. The targets also include "completions" funded by prior-year monies because research often requires more than 1 year to deliver a product. Similarly, funding increases in a given year support some long-term efforts, the completion of which will not be achieved until outyears. Therefore, departures of FY 1999, FY 2000, and FY 2001 targets from the FY 1998 baseline represent not only the aggregate impact of funding increases and decreases in the given year, but also the completion of long-term efforts from prior-year funding increases or decreases, and/or cyclic studies mandated by Congress.

1.5 ADJUSTMENTS TO STRATEGIC PLAN

In 1999 our Refocused Strategic Plan 1997-2005 underwent a formal consultation process, advertised in the Federal Register, that involved public and employee reviews, stakeholder meetings, written and on-line comments, briefings, and congressional consultations. We received approximately 35 written comments from bureaus within the Department of the Interior, other Federal agencies, employees of the USGS, private corporations, the university community, environmental organizations and other non-governmental organizations, and private individuals. Comments on our programs received during approximately 200 regular stakeholder meetings were also incorporated into the revised Plan. Within USGS, a 2-day meeting of 50+ senior managers included facilitated discussion sessions on the Plan. In general, these consultations supported the new simplified mission goals and the long-term goals of the refocused Plan. Adjustments that were made in response to comments and program evaluations, include a new customer satisfaction measurement for the two GPRA Program Activities and revised performance measurement for real-time hazards as further described in the Verification and Validation section for the Hazards goal. The new revised Strategic Plan for FY 2000-2005 that has emerged from this process is the basis for the current FY 2000 and 2001 Annual Plans.

FY 2001 Goals At-a-Glance Table

DEPARTMENTAL GOAL 4. PROVIDE SCIENCE FOR A CHANGING WORLD

USGS GPRA Program Activity	Long-Term Goals	Annual Goal
<p>Hazards Provide science for a changing world focusing efforts in response to present and anticipated needs to predict and monitor hazardous events in near-real and real-time and to conduct risk assessments to mitigate loss.</p>	<p>Ensure the continued transfer of hazards-related data, risk assessments, and disaster scenarios needed by our customers before, during, and after natural disasters, and by 2005, increase the delivery of real-time hazards information by increasing the quarterly average number of gages reporting real-time data on the Internet to 5,500 (thus reducing the time it takes to provide flood information at that site from 6 to 8 weeks to 4 hours) and installing 500 improved earthquake sensors (thus reducing delivery time of information on potentially damaging earthquakes from 40 to 20 minutes) to minimize the loss of life and property.</p>	<p>Develop, maintain and improve monitoring networks and techniques of risk assessment by: maintaining the baseline of data and risk assessments transferred to customers; increasing by 300 the quarterly average number of streamgages delivering real-time data on the Internet, and increasing by 150 improved earthquake sensors to deliver real-time information on potentially damaging earthquakes to minimize loss of life and property.</p>
<p>Environment and Natural Resources Provide science for a changing world in response to present and anticipated needs to expand our understanding of environment and natural resource issues on regional, National, and global scales and enhance predictive/forecast modeling capabilities.</p>	<p>Ensure the continued availability of long-term environmental and natural resource information and systematic analysis and investigations needed by customers, and by 2005, develop 20 new decision support systems and predictive tools for informed decision-making about natural systems.</p>	<p>Provide and improve long-term environmental and natural resource information, systematic analysis and investigations, and predictive options for decisionmaking about natural systems by: providing essential information to address environmental and natural resources issues by maintaining 45 long-term data collection/data management efforts and supporting 2 large data infrastructures managed in partnership with others; delivering 1,077 new products from systematic analyses and investigations to our customers; improving and developing 9 new decision support systems and predictive tools for decisionmaking; and collaborating with university partners to understand natural systems and facilitate sound management practices through 258 external grants and contracts.</p>

Performance Measure	2000	2001	2005
Hazards monitoring networks maintained	6	6	6
Risk assessments delivered	10	9	9
Real-time stream-gages on the Internet (quarterly avg)	4,700	5,000	5,500
Real-time earthquake sensors (cumulative)	200	350	700
Stakeholder meetings	13	13	13
Customer satisfaction	Baseline	Measure	Measure
Long-term data collection and data management efforts maintained and improved, and large data infrastructures supported	46	47	46
New products from systematic analyses and investigations delivered to customers	995	1,077	N/A
Decision support systems or predictive models developed or improved and delivered to customers	6	9	20
University-based partnerships for natural systems analysis	248	258	N/A
Stakeholder meetings	438	459	N/A
Customer satisfaction	Baseline	Measure	Measure

Section II

GPRA Program Activities and Goals

2.1 GPRA PROGRAM ACTIVITY: HAZARDS

Description

Provide science for a changing world in response to present and anticipated needs, focusing efforts to predict and monitor hazardous events in near-real and real time and to conduct risk assessments to mitigate loss.

Hazards are unpreventable natural events that, by their nature, may expose our Nation's population to the risk of death or injury; and may damage or destroy private property, infrastructure, and agricultural or other developed land. USGS hazards mission activities deal with describing, documenting, and understanding natural hazards and their risks. These activities include long-term monitoring and forecasting, short-term prediction, real-time monitoring, and communication with civil authorities and others during a crisis. Other significant activities are post-crisis analysis to develop strategies to mitigate the impact of future events, and coordinated risk assessments for regions vulnerable to natural hazards.

The USGS has the primary Federal responsibility for monitoring and issuing warnings for earthquakes, volcanoes, landslides, and geomagnetic (solar) storms. We work closely with the National Weather Service in providing the hydrologic information used to forecast floods; the National Oceanic and Atmospheric Administration in monitoring coastal erosion and tsunamis; the Interagency Fire Center to support wildland fire management activities; and the Fish and Wildlife Service and others in monitoring and reporting on wildlife disease outbreaks. The USGS has unique capabilities for integrating hazards information with a wealth of other geospatial data and imagery to rapidly assess the impact of natural hazards events.

KEEPING PEOPLE OUT OF HARM'S WAY

Through the joint USGS/USAID Volcano Disaster Assistance Program, USGS volcanologists responded to official requests to help interpret precursory unrest and eruptions at two volcanoes in Ecuador — Guagua Pichincha, adjacent to the capital city of Quito, and Tungurahua, near the popular tourist destination of Banos. Over a period of several months, USGS volcanologists worked with host-country scientists, aiding with monitoring-network upgrades, data interpretation, assessment of potential hazards, and development of a public-notification scheme. To minimize disruption of operations at Quito International Airport, USGS personnel provided information about the effects of ash falls to airport officials and American air carriers, and arranged for staff of Anchorage International Airport that was experienced with ash impacts to visit and advise Quito's airport managers.

FY 2001 Goal

Develop, maintain and improve monitoring networks and techniques of risk assessment by: maintaining the baseline of data and risk assessments transferred to customers; increasing by 300 (to 5,000) the average number of streamgages delivering real-time data on the Internet and increasing by 150 improved earthquake sensors to deliver real-time information on potentially damaging earthquakes to minimize loss of life and property.

Proposed Legislation

Performance goals are not contingent on enactment of legislation during the fiscal year covered by the annual plan.

BUDGET TABLE

Budget Activity/Subactivity (\$000)	FY 1999 Enacted Approp less rescission		FY 2000 Enacted Approp less reductions		FY 2001 Pres Budget	
	Total	Hazards	Total	Hazards	Total	Hazards
National Mapping Program (Budget Activity)	138,148	6,015	126,717	7,950	155,282	7,950
Mapping Data Collection and Integration	63,691	0	56,330	5,250	67,327	5,250
Earth Science Info Management and Delivery	36,388	4,555	34,270	1,250	36,911	1,250
Geog Research and Applications	38,069	1,460	36,117	1,450	51,044	1,450
Geologic Hazards, Resources, and Processes	238,659	93,297	211,222	84,108	224,809	90,200
Geologic Hazard Assessments	76,237	76,237	69,111	69,111	73,236	73,236
Geologic Landscape and Coastal Assessments	73,935	17,060	65,435	14,997	77,189	16,964
Geologic Resource Assessments	88,487	0	76,676	0	74,384	0
Water Resources Investigations	208,542	12,764	185,819	14,764	197,576	18,764
Water Resources Assessment and Research	103,991	0	91,037	0	90,355	0
Water Data Collection and Management	29,359	2,190	29,167	4,190	39,275	8,190
Fed-State Coop Water Program	70,137	10,574	60,553	10,574	62,879	10,574
Water Resources Research Act Program	5,055	0	5,062	0	5,067	0
Biological Research	162,187	0	136,896	0	158,781	0
Biological Research and Monitoring	138,24	0	113,232	0	123,430	0
Bio Info Management and Delivery	11,443	0	10,484	0	21,243	0
Cooperative Research Units	12,497	0	13,180	0	14,108	0
Programmatic Total	747,536	112,076	660,654	106,822	736,448	116,914
General Administration/Science Support (prorated)	27,204	4,081	67,104	10,737	70,895	11,343
Facilities (prorated)	21,501	3,225	85,618	13,699	88,036	14,086
Appropriations Total (not including supplementals)	796,241	119,382	813,376	131,258	895,379	142,343

GPRA PROGRAM ACTIVITY: HAZARDS

Long-Term Goal — Ensure the continued transfer of hazards-related data, risk assessments, and disaster scenarios needed by our customers before, during, and after natural disasters, and by 2005, increase the delivery of real-time hazards information by increasing the quarterly average number of gages reporting real-time data on the Internet to 5,500 (thus reducing the time it takes to provide flood information at that site from 6 to 8 weeks to 4 hours) and installing 500 improved earthquake sensors (thus reducing delivery time of information on potentially damaging earthquakes from 40 to 20 minutes) to minimize the loss of life and property.

FY 2001 Annual Performance Goal — Develop, maintain and improve monitoring networks and techniques of risk assessment by: maintaining the baseline of data and risk assessments transferred to customers; increasing by 300 (to 5,000) the average number of streamgages delivering real-time data on the Internet and increasing by 150 improved earthquake sensors to deliver real-time information on potentially damaging earthquakes to minimize loss of life and property.

Performance Measure	1997 Actual	1998 Actual	1999 Plan	1999 Actual	2000 Plan	2001 Proposed
Hazards monitoring networks maintained	6	6	6	6	6	6
Risk assessments delivered*	n/a	16	14	16	10	9
Real-time streamgages (cumulative)	4,467	4,571	4,671	5,132	Discontinued	
Real-time streamgages on the Internet (quarterly average)	Replacement			4,500	4,700	5,000
Real-time earthquake sensors (cumulative)	70	100	120	120	200	350
Stakeholder meetings	n/a	16	16	16	13	13
Customer satisfaction	Pilot	Pilot	Pilot	Pilot	Baseline	Measure

* The decline in the number of risk assessments delivered is not related to the budget but rather the cyclic nature of the investigations.

Goal Description

Programs: USGS will enhance our ability to characterize and monitor hazardous events in near-real and real time by adding telemetered streamgages and earthquake sensors that are capable of delivering information almost instantaneously. In addition, long-term data vital both to emergency response and to analysis of flood, earthquake, and other hazard risks will continue to be collected and maintained through current monitoring networks. We will upgrade our monitoring infrastructure; measure the reliability, delivery times, and accuracy of our real-time hazards information to evaluate improvements; and improve the utility of our information by identifying areas vulnerable to damage by particular hazards. Scientific datasets integral to the delivery of hazards information — key maps and geospatial information, for example — will be made easier to interpret and integrate. This will assist in risk assessment, rescue, recovery, and reconstruction efforts. Stakeholder meetings will be held with customers, cooperators, and the public who have a major role or interest in hazard warning or response to help us define needs and set program priorities. We will also continue to develop better ways to measure outcomes linked to those of our key partners such as Federal Emergency Management Agency, National Weather Service, and State groups.

Operations: USGS will maximize the efficiency of administrative, science support, and programmatic activities by streamlining and enhancing the reliability of our systems for hazards data delivery. We will continue to upgrade our information infrastructure to improve our ability to integrate hazards-related data and assessments.

People: Our employees are at the core of achieving the Hazards goal over the long term. They are in the field before, during, and after events, installing instruments and making measurements. They use a wide range of analysis and modeling methods to turn these measurements into improved hazard assessment products.

We will evaluate our current capabilities and skills, and actively invest in training employees in the skills needed to keep pace with technology to understand and model natural systems. We are aligning our rewards systems to

encourage the integration of capabilities and to support increased responsiveness to customers' needs, such as better prediction of and response to hazards, and development of tools tailored to the needs of emergency managers. Finally, we will respond more quickly and effectively to natural disasters by developing response plans, using new contractual mechanisms for obtaining new skills, removing barriers to resource sharing, and increasing use of cooperative agreements with other emergency response entities.

Customers: USGS will focus on understanding the needs of key users of hazards information, such as emergency managers, industry, community planners, and citizens. We will increase development and delivery of products and services tailored to the current and future needs of these customers.

FY 2001 GOALS

For FY 2001, USGS has developed an initiative to accelerate achievement of the Hazards long-term goal. The Safer Communities initiative requests increased funding totaling \$7.1 million to update portions of the national earthquake monitoring network (+\$2.6 million), expand real-time monitoring of volcanoes in Alaska (+\$0.5million), and upgrade the streamgaging network (+\$4.0 million).

The cost of natural disasters — earthquakes, floods, volcanoes — has skyrocketed in recent decades. Overall, 39 States are exposed to significant **earthquake risk**. Safe air travel is imperiled by the threat of crippling damage to aircraft from volcanic-ash clouds drifting at high altitudes, particularly in the North Pacific where heavily traveled air routes overlie Alaska's numerous **active volcanoes**. More lives and property are lost due to **flooding** than any other natural disaster, and every State in the Nation is affected. The USGS has the primary Federal responsibility for monitoring and issuing warnings concerning earthquakes and volcanoes, and provides the streamflow and related hydrologic information needed by the National Weather Service to predict and monitor floods. In all of these programs, USGS hazards experts work closely with local, State, and Federal partners in pursuit of the national goals of reducing the toll of natural disasters and building disaster-resilient communities.

USGS seeks to develop better monitoring techniques, and faster, more reliable communication links so that information is quickly available to all who need it during natural disasters. We propose to accelerate and enhance our ability to provide advance warning of impending natural disasters to appropriate authorities, which in turn will enable communities to save lives and property, and create stronger, safer communities for our children, and grandchildren.

Customer Satisfaction Measurement: USGS customers will be surveyed to determine their satisfaction with key USGS hazards information products. Product usefulness will be evaluated on the basis of customer requirements such as media, format, and timeliness. A baseline will be established in FY 2000, and targets will be set for the revised final FY 2001 plan to ensure continual improvement. A more complete description is included in Section 3 Customer Service.

Growth Rate: Hazards-related activities represented 15% of the total FY 1999 budget, and 16% of the FY 2000 and 2001 budgets. Of the net funding increases from year to year, hazards-related programmatic increases represented about 70% from FY 1999 to FY 2000, and about 14% from FY 2000 to FY 2001.

FY 1999 ANNUAL PERFORMANCE REPORT

Goal: Develop, maintain, and improve monitoring networks and techniques of risk assessment by: maintaining the baseline of data and risk assessments transferred to customers; increasing by 100 sites streamgages with real-time capability, and increasing by 20 improved earthquake sensors to deliver real-time information on potentially damaging earthquakes to minimize loss of life and property.

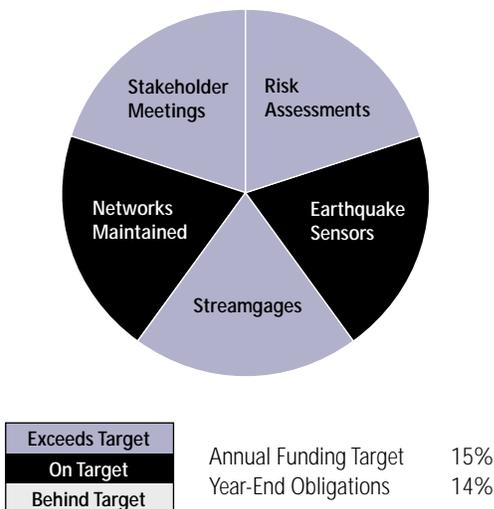
Report: USGS met or exceeded all performance indicators for the Hazards goal as shown on the table on page 12. We exceeded our target for streamgage telemetry installed in FY 1999 by more than 500%, testimony to our commitment to enhancing our real-time hazards capability. Our verification and validation efforts have compelled us to revise the streamgage performance metric for FY 2000, described further in the verification and validation section.

USGS planned to obligate approximately 15% of our FY 1999 appropriation to achieving the Hazards goal. Actual obligations and expenditures for FY 1999 totaled 14% of appropriated and reimbursable funds.

DATA VERIFICATION AND VALIDATION

Each performance measure has its own performance data collection strategy and validation hierarchy of review. In addition to those efforts cited, USGS conducts cyclical program evaluations that contribute to the validation of performance measurement.

Hazards



DATA VERIFICATION AND VALIDATION

Performance Measure and Definition	Data Collection Methodology, Sources and Limitation	Validation
<p>Hazards monitoring networks maintained A monitoring network consists of an array of sensing devices, IT infrastructure, and personnel that together detect, record, interpret, integrate and deliver data for a given hazard</p>	Managers monitor and supervise functioning of networks at observatories, research centers, and Water Districts, and report status by exception	Program Coordinators/ Program Officers validate
<p>Risk assessments delivered Regional or national assessment of risk for one or more hazards</p>	Hazards assessments are tracked as published USGS reports; Hazards notifications based on monitoring data are recorded at and reported by USGS observatories, centers, etc.	Official USGS Annual Publications listing verifies publication
<p>*Real-time streamgages Telemetry is added to existing streamgages to provide real-time flow info for NWS forecasters and emergency management and response officials</p>	*Annual inventory of streamgaging stations conducted by all USGS Water District Office data section chiefs and reported to HQ at the end of the fiscal year	*Certification by each District Chief and the Chief of the Office of Surface Water
<p>Real-time earthquake sensors Ground motion detectors are the initial instrument installed to capture and transmit real-time info</p>	Annual inventory of earthquake sensors conducted by Seismic Network operators and reported to HQ at the end of the fiscal year	Certification by Coordinator of the Earthquake Hazards Program
<p>Stakeholder meetings Major meetings with other Feds, customers, cooperators, Administration and congressional oversight groups and/or the public who have a major role/interest in hazard warning or response</p>	Program coordinator schedules, organizes/attends annual stakeholder meetings and maintains records that the meetings have taken place	Regional or Associate Director verifies that stakeholder meetings have taken place.

*Our verification and validation efforts have compelled us to revise the streamgage performance metric for FY 2000. Because USGS has responsibility to deliver hazards information to the National Weather Service and others, the reliability of the systems that deliver streamflow data is a crucial component of USGS's performance. In addition, we encountered problems with collecting reliable performance data on a quarterly basis to provide timely information for management purposes. Questions of streamflow data systems reliability are

fundamental to the validation process and should be reflected in the performance metric:

- During floods or other natural disasters, do we have the capability to continue providing data to those who need it, by using electrical generators and "mirror" Web sites and other system backups?
- Under normal circumstances, on a day-to-day basis, how reliable are our Web sites which provide data?

- How reliable are the individual data collection stations and the satellite links and other systems that relay the data from the stream to the USGS National Water Information System database?

All of these factors can affect USGS's ability to deliver hazards information in real time, in fulfillment of its strategic goals. Therefore, USGS is proposing to change our real-time streamgages metric not only to reflect the number of real-time streamgages that USGS puts in place each year but also to capture our ability to deliver hazards data to those who need it, and to automate the performance tracking process as well. USGS developed a "robot" program that queries each District Office Web site every day, asking: "how many sites are delivering real-time data on the Web right now?" This query results in a total number of gaging stations across the Nation that are delivering real-time data over the Internet at that particular moment. Numbers may vary from day to day for several reasons:

- District Office computers can be affected by maintenance problems, storms, or power outages;
- the satellites which transmit the data can be affected by solar interference or heavy storm activity; and
- individual gaging stations may be out of commission at the moment of the robot query due to weather, high water, power outages, vandalism, or routine maintenance activities or quality control activities.

At the end of the quarter, all the daily values collected by the robot program will be averaged together, resulting in one number that represents the "quarterly average number of gages reporting real-time data on the Internet" — our proposed performance measure for FY 2000 and beyond. A test run of this method conducted over a period of 15 days at the end of FY 1999 resulted in a baseline average of approximately 4,500 gages.

USGS is also exploring alternatives to the earthquake sensor performance measure to better capture our ability to deliver hazards data to those who need it, and automate the performance tracking process.

2.2 GPRA PROGRAM ACTIVITY: ENVIRONMENT AND NATURAL RESOURCES

Description

Provide science for a changing world in response to present and anticipated needs to expand our understanding of environmental and natural resource issues on regional, national, and global scales, and enhance predictive/forecast modeling capabilities.

Our environment — the air, water, soil, and plant and animal life — is constantly changing as natural processes and human actions affect it. Changes in demographics also affect the competition for and use of the renewable and nonrenewable natural resources — land, water, minerals, and energy — needed to sustain life, and to maintain and enhance our Nation's economic strength. As land and resource management issues become increasingly complex, both environmental and natural resources sciences are needed to guide decisions, predict outcomes, and monitor results. The need for cross-discipline, integrated science has never been more apparent. USGS environment and natural resources mission activities focus on studies of natural, physical, chemical, and biological processes, and on the results of human actions. These studies encompass collecting data, making long-term assessments, conducting ecosystem analyses, monitoring change, and forecasting the changes that may be expected in the future.

The USGS cannot and does not seek to collect all of the environmental and natural resources data required for managers, regulators, and the general public to make informed decisions. We are increasingly **building partnerships** among Federal, State, local, private, and industrial entities to leverage resources and expertise.

Established protocols for data collection are critical to ensuring the comparability, the validity of interpretation, integration, and usefulness of data for land and resource decisionmaking. The USGS is working with customers to identify their long-term environmental and natural resource issues, current trends, and available information to improve our data collection and data management efforts; to deliver systematic analyses needed by our customers; and to develop and improve decision support systems. We are also seeking new applications and increased use of our classified assets.

"Established a state-wide frog monitoring program utilizing NAAMP [North American Amphibian Monitoring Program] protocols. The information provided by NAAMP is current and easily available over the World Wide Web. Because the protocols have been peer reviewed and often validated with specific research studies, they are very helpful in efficiently planning solid monitoring research projects of my own."

University respondent to customer survey

FY 2001 Goal

Provide and improve long-term environmental and natural resource information, systematic analysis and investigations, and predictive options for decisionmaking about natural systems by: providing essential information to address environmental and natural resources issues by maintaining 45 long-term data collection/data management efforts and supporting two large data infrastructures managed in partnership with others; delivering 1,077 new products from systematic analyses and investigations to our customers; improving and developing nine new decision support systems and predictive tools for decisionmaking; and collaborating with university partners to understand natural systems and facilitate sound management practices through 258 external grants and contracts.

Proposed Legislation

Congress is working on reauthorization of the Water Resources Research Act which expires September 30, 2000. The Water Research Institute component of the university-based partnership performance measure is conducted under this legislation.

BUDGET TABLE

Budget Activity/Subactivity (\$000)	FY 1999 Enacted Approp less rescission		FY 2000 Enacted Approp less reductions		FY 2001 Pres Budget	
	Total	ENR	Total	ENR	Total	ENR
National Mapping Program (Budget Activity)	138,148	132,133	126,717	118,767	155,282	147,332
Mapping Data Collection and Integration	63,691	63,691	56,330	51,080	67,327	62,077
Earth Science Info Management and Delivery	36,388	31,833	34,270	33,020	36,911	35,661
Geog Research and Applications	38,069	36,609	36,117	34,667	51,044	49,594
Geologic Hazards, Resources, and Processes	238,659	145,362	211,222	127,114	224,809	134,609
Geologic Hazard Assessments	76,237	0	69,111	0	73,236	0
Geologic Landscape and Coastal Assessments	73,935	56,875	65,435	50,438	77,189	60,225
Geologic Resource Assessments	88,487	88,487	76,676	76,676	74,384	74,384
Water Resources Investigations	208,542	195,778	185,819	171,055	197,576	178,812
Water Resources Assessment and Research	103,991	103,991	91,037	91,037	90,355	90,355
Water Data Collection and Management	29,359	27,169	29,167	24,977	39,275	31,085
Fed-State Coop Water Program	70,137	59,563	60,553	49,979	62,879	52,305
Water Resources Research Act Program	5,055	5,055	5,062	5,062	5,067	5,067
Biological Research	162,187	162,187	136,896	136,896	158,781	158,781
Biological Research and Monitoring	138,247	138,247	113,232	113,232	123,430	123,430
Bio Info Management and Delivery	11,443	11,443	10,484	10,484	21,243	21,243
Cooperative Research Units	12,497	12,497	13,180	13,180	14,108	14,108
Programmatic Total	747,536	635,460	660,654	553,832	736,448	619,534
General Administration/Science Support (prorated)	27,204	23,123	67,104	56,367	70,895	59,552
Facilities (prorated)	21,501	18,276	85,618	71,919	88,036	73,950
Appropriations Total (not including supplementals)	796,241	676,859	813,376	682,118	895,379	753,036

ENR = Environment and Natural Resources

GPRA PROGRAM ACTIVITY: ENVIRONMENT AND NATURAL RESOURCES

Long-Term Goal — Ensure the continued availability of long-term environmental and natural resource information and systematic analysis and investigations needed by customers, and by 2005, develop 20 new decision support systems and predictive tools for informed decisionmaking about natural systems.

FY 2001 Annual Performance Goal — Provide and improve long-term environmental and natural resource information, systematic analysis and investigations, and predictive options for decision-making about natural systems by: providing essential information to address environmental and natural resources issues by maintaining 45 long-term data collection/data management efforts and supporting two large data infrastructures managed in partnership with others; delivering 1,077 new products from systematic analyses and investigations to our customers; improving and developing 9 new decision support systems and predictive tools for decision-making; and collaborating with university partners to understand natural systems and facilitate sound management practices through 258 external grants and contracts.

Performance Measure	1997 Actual	1998 Actual	1999 Plan	1999 Actual	2000 Plan	2001 Proposed
Long-term data collection and data management efforts maintained and improved, and large data infrastructures supported	34	40	40	40	46	47
New products from systematic analyses and investigations delivered to customers	n/a	865	843	959	995	1,077
Decision support systems or predictive models developed or improved, and delivered to customers	n/a	5	6	7	6	9
University-based partnerships for natural systems analysis	235	270	272	238	248	258
Stakeholder meetings	207	212	228	473	438	459
Customer satisfaction	Pilot	Pilot	Pilot	Pilot	Baseline	Measure

Goal Description

Programs: Environment and Natural Resource programs will focus on understanding, modeling, and predicting how multiple forces affect natural systems. This knowledge will enable land managers, decisionmakers and citizens to make sound decisions about how to live on and manage the land. The USGS will provide these customers with a better understanding of natural systems at all scales, with more and better predictive tools and decision support systems, and with easier access to natural science data. USGS will continue to improve the quality and usability of our long-term datasets and accompanying interpretive products, including water quantity and quality assessments, mineral and energy information, biological data and information, water use information, and high-quality digital maps depicting the character of the earth's surface. In particular, we will develop predictive models and decision support systems that allow managers and decisionmakers to evaluate the resource and environmental consequences of management choices under various scenarios. This information can be used to improve management decisions. Stakeholder meetings will be held with customers, cooperators, and the public who have a major role or interest in environment and natural resource issues to help us define needs and program priorities.

Operations: USGS will improve the efficiency of administrative, science support, and programmatic activities to streamline systems for delivery of environment and natural resources data and information. USGS will implement our Information Infrastructure Plan to ensure that data comply with common standards and protocols.

People: As with Hazards, USGS employees are at the core of achieving the Environment and Natural Resources goal. USGS will assess our current capabilities and skills, and actively invest in training our employees in the skills needed to improve our ability to understand natural systems, develop improved predictive models, and better communicate with customers. USGS is aligning our rewards systems to reinforce the need for better integration of capabilities, and more responsiveness to customer needs. Finally, we will take steps to increase our flexibility to respond quickly and effectively to the needs of our customers by putting in place

new contractual vehicles for obtaining new skills, removing barriers to resource sharing, and increasing use of cooperative agreements with others who use our data and information on natural resources and the environment.

Customers: We will focus on key users of environment and natural resources information, such as Federal, State, and local managers, to ensure their needs are understood and are being met. USGS will increase development and delivery of products and services tailored to the current and future needs of these customers.

USGS MINERALS INFORMATION

During 1999, the USGS minerals information Web site was visited a monthly average of 153,000 times, which included the download of an average of 55,000 copies of USGS minerals information publications by more than 17,000 different customers every month. The use of the Internet has helped improve the timeliness of and access to USGS minerals information publications. Subscriptions for paper copies of these publications has fallen from a high of about 17,000 to the current level of about 5,000.

GOVERNMENT TECHNOLOGY LEADERSHIP AWARD

In 1999 USGS received two of 21 awards selected from 109 nominations. This award was created to recognize projects that have directly aided in fulfilling the mission of an organization by improving service to the public through original uses of technology, boosting efficiency and effectiveness, and lowering costs. The USGS programs that received the awards are the National Atlas and the National Biological Information Infrastructure (NBII). See <http://www.govexec.com/features/1299/1299s6.htm>. The NBII was also selected as one of 1999's Best Feds on the Web by GovExec.com, the Web site of Government Executive magazine. The NBII was one of 16 winners chosen from 120 nominations submitted.

FY 2001 GOALS

For FY 2001, USGS has developed initiatives to address a series of questions and management issues related to people and wildlife, and the land and resources that support them. These initiatives are categorized by theme — livable communities, sustainable resources for the future, and America's natural heritage. Several components also support the Administration's Lands Legacy initiative, State planning partnerships to help States and communities preserve local lands and habitat and develop decision support tools for land and resource managers. These funding increases are requested to accelerate achievement of the Environment and Natural Resources mission goal.

Livable Communities (+\$47.0 million) Americans want communities in which they can enjoy a healthy environment while earning a decent living. To balance competing demands for natural resources, recreational opportunities, wildlife habitat, and economic growth, planners need reliable tools and a variety of information. The USGS delivers these products to the doorsteps of communities, empowering them to plan for intelligent sustainability and growth. With the funding increase proposed for FY 2001, USGS will help local communities solve natural resource problems by upgrading our infrastructure to provide easy access to understandable, usable information on the natural resources vital to community health. USGS will develop planning tools that help decisionmakers understand and predict the effects of their choices. The result will be a balance of strong local economies and healthier environments.

Sustainable Resources for the Future (+\$15.3 million) Understanding how our land responds to change is essential for continued enjoyment of the natural landscape. With additional funding in FY 2001, USGS will develop tools to help understand and predict how the land interacts with the oceans and air, and how it reacts to our many uses of it. Special attention will be paid to such critical areas as the Columbia River, Lower Mississippi, Great Lakes, Yellowstone area, and Mojave Desert in an effort to develop restoration tools. With a solid understanding of how the Earth works, we can help to ensure thriving, vital landscapes for people and wildlife.

America's Natural Heritage (+\$16.7 million) A vital part of America's natural legacy is its parks, refuges, and other public lands, many of which are entrusted to the Department of the Interior. These landscapes, and the fish and wildlife they support, are at the core of our national identity. USGS, in partnership with stakeholders throughout the Nation, is helping land and resource managers preserve our natural heritage by monitoring, assessment, and research that addresses issues of critical importance. With the increased funding requested in FY 2001, USGS will increase science support for high-priority land and resource management needs of the DOI; increase efforts to monitor amphibian status and investigate factors related to their decline; study fish and wildlife diseases, such as the West Nile Virus; and track birds that carry disease to anticipate future outbreaks in humans. USGS also will fully staff science positions at Cooperative Research Units. This work will provide the scientific foundation for preserving America's treasures.

Customer Satisfaction Measurement: USGS customers will be surveyed to determine their satisfaction with key USGS environment and natural resource information products. Product usefulness will be evaluated on the basis of customer requirements such as media, format, and timeliness. A baseline will be established in FY 2000, and targets will be set for the revised final FY 2001 plan to ensure continual improvement. A more complete description is included in Section 3 Customer Service.

Growth Rate: Environment and Natural Resources-related activities represented 85% of the total FY 1999 budget and 84% of the FY 2000 and 2001 budgets. Of the net increases from year to year, environment and natural resources-related programmatic increases represented about 30% from FY 1999 to FY 2000, and about 86% from FY 2000 to FY 2001.

FY 1999 ANNUAL PERFORMANCE REPORT

Goal: Provide and improve long-term environmental and natural resource information, systematic analysis and investigations, and predictive options for decision-making about natural systems by: providing essential information to address environmental and natural resources issues by maintaining 38 long-term data collection/ data management efforts and supporting two large data infrastructures managed in partnership with others; delivering 843 new systematic analyses and investigations to our customers; improving and developing six new decision support systems and predictive tools for decision-making; and collaborating with university partners to understand natural systems and facilitate sound management practices through 272 external grants and contracts.

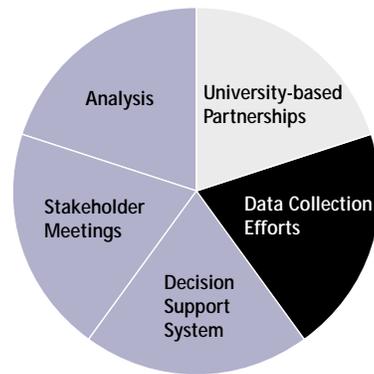
Report: USGS met our data collection target, failed to meet our university-based partnership target, and exceeded the three remaining targets for analyses, decision support systems, and stakeholder meetings for the Environment and Natural Resources goal. Actual numeric performance data are shown on the table on page 19. Our shortfall in university research work orders for the Cooperative Research Units resulted from fewer than anticipated large/long-term studies with severable research components. This shortfall actually represents improved time and cost efficiency rather than lost or decreased productivity. Partner and cooperator satisfaction remain high. Evaluation and validation efforts for the Environment and Natural Resources program activities will endeavor to produce a measure that can more capably capture performance and outcome for this external component of our programs.

USGS planned to obligate approximately 85% of our FY 1999 appropriation to achieve the Environment and Natural Resources goal. Actual obligations and expenditures for FY 1999 totaled 86% of appropriated and reimbursable funds.

DATA VERIFICATION AND VALIDATION

Each performance measure has its own performance data collection strategy and validation hierarchy of review. In addition to those efforts cited, USGS conducts cyclical program evaluations that contribute to the validation of performance measurement.

Environment and Natural Resources



Exceeds Target
On Target
Behind Target

Annual Funding Target	85%
Year-End Obligations	86%

PARTNER AND CUSTOMER SATISFACTION...

the Coop Units "work has redefined what we now consider optimum habitat for elk and will change how we manage road closures for the species."

BLM respondent to customer survey

Performance Measure and Definition	Data Collection Methodology, Sources and Limitation	Validation
<p>Long-term data collection and data management efforts maintained and improved, and large data infrastructures supported</p> <p>Long-term, large-scale database efforts to ensure the collection, preservation, and dissemination of natural science data, including support for the development of national infrastructures for the management and sharing of these data produced at all levels of government.</p>	<p>Performance data are collected by project scientists at research/field centers and are reported through an automated, electronic system</p>	<p>For geospatial databases, reports provided by the Federal Financial System and the Sales Data Base verify the amount of maps, data, aerial photographs and satellite images available in the various databases and inventories. For geologic databases, certification is made by Program Coordinator. For water resources data collection, certification is made by each District Chief and the Office of Surface Water. For biological databases, validation occurs through national program element reviews, and reviews of individual research centers.</p>
<p>New products from systematic analyses and investigations delivered to customers</p> <p>Reports or other products delivered to managers or the scientific community that result from long-term assessments or from investigations to determine causes and/or effects of environmental change. Reports and other products are delivered as paper copies or Internet products.</p>	<p>USGS compiles a list of new publications monthly and makes it available on the Internet at:</p> <p>http://pubs.usgs.gov/publications/index.html</p> <p>A paper version of this list is updated quarterly.</p>	<p>Accuracy of "new reports" listing can be confirmed by each internal organization's reports tracking system.</p>
<p>Decision support systems or predictive models developed or improved and delivered to customers</p> <p>Decision support tools and predictive models are broad in scope, are robust, yield either quantitative predictions about natural resources or the environment or quantitative options for land and resource management, and are used regularly by managers for informed decision-making.</p>	<p>Data on development delivery and use of decision support systems and predictive models are monitored and reported by project scientists at research/field centers and are reported through automated, electronic systems such as</p> <p>http://water.usgs.gov/software/ for new water investigation models and Science Information System (SIS)</p> <p>http://www.nbs.gov/science/currproj.html for biological models</p>	<p>For mapping models, the Senior Program Advisor for Geographic Research and Applications validates delivery and use by customers. For geologic models, validation is conducted by Program Coordinators and stakeholder reps. For water resources models, a technical memorandum is issued for each model. For biological models, validation occurs through national program element reviews and reviews of individual research centers.</p> <p>Ultimately customers validate that the systems and models are acceptable and useful.</p>

DATA VERIFICATION AND VALIDATION (CONTINUED)

Performance Measure and Definition	Data Collection Methodology, Sources and Limitation	Validation
<p>University-based partnerships for natural system analysis</p>	<p>For water resources research partnerships, source of data is the Chief, Office of Research. For biological partnerships, source of data is the Cooperative Research Unit Coordinator.</p>	<p>Certification from USGS Contracts Office that the partnerships have been awarded.</p>
<p>Stakeholder meetings Major meetings with other Feds, customers, cooperators, Administration and congressional oversight groups and/or the public who have a major role/interest in environmental and natural resource issues</p>	<p>Program coordinator schedules, organizes/ attends annual stakeholder meetings and maintains records that the meetings have taken place</p>	<p>Regional or Associate Director verifies that stakeholder meetings have taken place.</p>

Section III

Additional GPRA Information

3.1 CUSTOMER SERVICE

The USGS recognizes that excellent customer service is critical to good government. Similarly, our interface with our customers reflects the effectiveness of our organization. Our vision is to provide and support impartial scientific information, products, and services that are timely, cost effective, useful, and relevant in a changing world. We know that we must talk to our customers, find out what they need, integrate those needs into our program planning, and deliver products, services, and information in a timely and accurate manner.

The USGS has set standards for customer service. When interacting with the USGS, customers can expect:

- relevant, impartial scientific information about the natural sciences and support systems for these sciences;
- courteous and respectful treatment;
- prompt and accurate answers to questions;
- timely responses to information requests without being referred elsewhere, whenever possible;
- customer input to be considered in our plans, programs, and services; and prompt attention to correcting mistakes and problems.

At the end of every calendar year, the USGS collects information that helps assess how well goals are being met. A report on our customer service performance is prepared and made available to our customers. The 1998 Report to Customers can be found on-line at <http://www.usgs.gov/customer/>. Our 1999 Report to Customers will be available at the same Web address in March 2000.

The USGS has planned the following activities for Year 2000 to advance Customer Service goals and ensure service standards are met:

Conduct Cross-Program Survey: Pilot projects begun in 1997 marked the start of formalized efforts by USGS to gather information from customers about performance in specific programs. With an expanded information collection effort in FY 2000, USGS expects to identify customer service satisfaction levels across our programs. A cross-program survey based on USGS major products will ask customers to rate satisfaction. Results will be reported through USGS customer service Web pages and will provide a baseline for customer satisfaction metrics for GPRA performance measurement. USGS will use the information collected to make improvements to programs and products, and as part of a bureau-wide customer measurement framework.

Collect Customer Satisfaction Information Related to Our Web Pages, Earth Science Information Centers, and Biological Programs:

In 1999, the Office of Management and Budget approved a three-year generic clearance for information collection that enables the USGS to work with customers to research customer service performance. One information collection activity will involve a survey that reviews our Web site. Another activity involves expansion of a survey initiated in 1999 that seeks input from our Earth Science Information Center visitors and customers. The customer survey of biological programs will continue for a fifth year — the survey of FY 1998 products was the first attempt to link customer satisfaction to GPRA performance measures. The Partner and Customer Survey Report on Biological Programs for FY 1998 Products presents the results from this survey and is available on the Internet at: <http://www.mp2-pwrc.usgs.gov/brd/customer98.htm>

Complete Development and Design of a Measurement Framework: The USGS Customer Service and Research team will complete the design and

testing of a framework that characterizes our customers, their needs, and how they interact with the bureau. The framework will provide USGS program managers and customer service representatives with the tools that they need to effectively identify their customers and their customer needs and requirements; to design products/ services/information to meet those needs and requirements; and to assess customer satisfaction.

Continue Customer Service Pilots: Six new pilots were initiated in FY 1999. In FY 2000, four pilots will be continued to test the measurement framework. Additional pilots are anticipated.

Continue Customer Service Recognition Award: In FY 1999, the USGS fully implemented a Customer Service Recognition Award to recognize USGS employees who are providing superior customer service. Recipients are highlighted on the customer service Web page. In FY 2000, USGS will continue this program, increasing efforts to encourage our customers to nominate potential recipients.

Design a Customer Service Training Program: The USGS will be part of a DOI team, which will design a customer service educational training program for DOI employees based on the results of a National Performance Review survey conducted in 1999.

Benchmark Customer Complaint Processes: The USGS participated in DOI-sponsored benchmarking project focusing on identifying the best practices of other government agencies and the private sector in customer complaint systems. This project will lay the groundwork for designing and establishing a customer complaint/compliment system within the USGS. A report with recommendations is expected in March 2000.

DOI Customer Forum Leadership: USGS will continue to provide leadership for the DOI Customer Forum. Initiated in FY 1999, the forum serves as a mechanism through which Interior offices and bureaus can share experiences, ideas, and success stories in customer service, and identify opportunities and actions for improvement.

3.2 CROSSCUTTING ISSUES

The USGS is the science bureau for the Department of the Interior and the only integrated natural resources research bureau in the Federal Government. We support the Department's research needs as well as provide the water, biological, energy, and mineral resources information and capabilities needed by other Federal agencies and State and local governments to guide planning, management, and regulatory programs. Our research priorities are established in concert with our stakeholders to ensure their highest priority science needs are addressed, and to avoid duplication of effort among stakeholders. The USGS maintains consistency of its priorities with program evaluations and the National Science and Technology Council's (NSTC's) underlying principles for Federal science and technology investments.

For example, for FY 2000 and 2001 the NSTC's Interagency Research and Development Priorities include Integrated Science for Ecosystem Challenges. The USGS staff of biologists, geographers, geologists, hydrologists, and other professionals has the capability to work hand-

USGS PARTNERS WITH NOAA TO DELIVER REAL-TIME HAZARDS INFORMATION

NOAA's Internet access capability could not handle the enormous traffic generated by natural disasters. Using existing network infrastructures NOAA was connected to DOINET on September 15, 1999.

The next day Hurricane Floyd put it to the test as the National Hurricane Center in Florida immediately needed to deliver hurricane status information to the public, educational, news, and science communities through the Internet.

Hurricane Floyd generated the largest sustained rate of data to the public that was ever recorded within DOI or NOAA — about six times what we normally experience — with tens of millions of citizens using our Internet capability to stay abreast of hurricane developments.

in-hand with land managers at the local, State, and national level to solve today's problems, and provide knowledge to land managers that will ensure decisions made today will not have unintended consequences tomorrow. We have engaged the public, private, and academic sectors in dialogue to guide our efforts at integrating science and develop our research agenda. In FY 1999 the USGS, Ecological Society of America (ESA), and Geological Society of America (GSA) held a workshop on enhancing integrated science. The participants discussed the social, scientific, and administrative environments that lead to successful collaboration and integration, produced an initial set of principles for integrating scientific efforts, and made recommendations for both the USGS and the larger scientific community to facilitate interdisciplinary work. Two previous workshops held by USGS, ESA, GSA, and the Keystone Center (a non-profit science and public policy and educational organization) identified new interdisciplinary research opportunities relevant to USGS mission. The outcome of these and other stakeholder dialogues have focused USGS "Integrated Science" efforts, resulting in more efficient planning and operations.

To ensure the provision of sound and effective USGS science support for the Department, the DOI bureau directors have an *Agreement on USGS Research Support for DOI Resource Management Bureau Needs*. The bureaus engage in a defined process that assesses the status of current science support, identifies gaps and cross-bureau applications, and formulates priorities for USGS research in support of land management needs. Consultation and formulation includes: regional science forums that supply input on regional bureau priorities to the USGS; meetings between the USGS Director and each bureau director to discuss the regional input in the context of national perspectives; DOI Science Board meetings, chaired by the Secretary of the Interior, to present and discuss individual bureau priorities; and a meeting of DOI teams to review the priorities and identify linkages among priorities, applied across a matrix of common issues, species, or geographic locations. The results help establish the basis for future integrated proposals and, with the summaries of each bureau's priorities, form the framework for budget priorities. The FY 2001 budget proposes increases for integrated

science aimed at addressing the highest priority science needs of DOI bureaus.

The depth of coordination in which we engage may be demonstrated by looking at stakeholders working together on complex issues in a single location. For example, in South Florida, the USGS provides scientific information to all agencies involved in the restoration effort including:

- the U.S. Army Corps of Engineers and the South Florida Water Management District need USGS data and information to improve models of water flows and water quality, and to predict the consequences of the restoration efforts in South Florida.
- Everglades National Park needs USGS information about historical environmental conditions and the frequency of fire to understand current and historical water and fire conditions; to set ecological goals for restoration; to distinguish human influences from the natural background of water fluctuations and trace-element contamination; and to provide yardsticks to measure the success of the restoration.
- the Florida Department of Environmental Protection, the National Marine Fisheries Service, and the U.S. Environmental Protection Agency need information on mercury cycling to predict changes in the availability of mercury to fish as a result of restoration. This information includes interactions of mercury with peat, algae, and dissolved organic carbon, as well as historical mercury concentrations in peat.
- Communities in the Florida Keys need information on nutrient seepage from ground water, provided by the USGS, to determine whether it is necessary to modify their sewage-disposal practices.

The breadth of USGS coordination may be demonstrated in the following representative listing of USGS cross-cutting relationships with Federal, State, local, non-government, and international organizations.

Federal

National/Government-wide: Federal Geographic Data Coordination, National Spatial Data Infrastructure, National Biological Information Infrastructure, US Global Change Research Program, National Atlas, Geographic Names, Image and elevation data collection programs

Agriculture/Forest Service: Endangered Species, Conservation genetics, Habitat management, Forest plan, Wildlife, Invasive species, Fire science, National Forest maps, Drought/Fire fuel monitoring, Energy and mineral resources, Natural hazards, Mine lands, Land cover characteristics, Hydrologic data collection/studies

Commerce: Interactive mapping www, Hydrologic data collection/studies

Commerce/NOAA: Endangered Species, Salmonid restoration, Coral reefs, Hazards monitoring and research, Geomagnetism, Vegetation change, Coastal erosion, Fish habitat, Marine sanctuaries, Landsat 7 operations, GIS

Defense: Endangered Species, Salmonid restoration, Coral reefs, Coastal erosion, Backup mapping during conflict, Natural hazards, Test ban monitoring, Strategic minerals and energy resources, Geomagnetism, Terrain visualization, Hydrologic data collection/studies

Defense/Army Corp of Engineers: Endangered Species, Habitat assessment, Fish behavior, Fish physiology, Dam impacts, Wetlands restoration, Seafloor mapping, Shoreline stability, Floodplain morphology, Mine lands, Energy resources, Natural Hazards, Hydrologic data collection/studies

Energy: Endangered Species, Bio resource monitoring, Contaminant cause and effects, Gas Hydrates, Mining technology, Energy resources, Geologic hazards, Groundwater framework, Coal bed methane, Hydrologic data collection/studies

EPA: Endangered Species, Endocrine disruption, Contaminant effects, Status/Trends, Mine lands and drainage, Emissions modeling/clean air, Water quality, Seafloor mapping, Geochemical analyses, Coal resources and mining, Urban dynamics/land characterization, Hydrologic data collection/studies Remote sensing, Mineral baselines, GAP analysis

Federal Emergency Management Administration: Hazards monitoring and mitigation, Hydrologic data collection/studies

FEMA/Federal Insurance Administration: Hazards assessment

Health and Human Services: Chemical Analyses

Intelligence Community: Information coordination, Environmental/ resource studies, Hazards Support

Interior/BIA: Integrated Resources (water, geology, vegetation inventory, remote sensing)

Interior/BLM: Rangeland Health, Wild Horse Management, Invasive Species, Abandoned Mine Lands, Air Quality, T&E species, Water Quality, Mineral Resource Assessments, Prescribed Fire

Interior/BOR: Water quality, Ecological models, Decision Support Systems

Interior/FWS: Inventory and Monitoring, Aquatics and Contaminants, Biological resources, T&E species, Water Quantity/Quality, GAP analysis

Interior/MMS: Gas hydrates

Interior/NPS: Water quantity/quality, Geologic mapping, Biological resources

Interior/OSM: Acid mine drainage

Justice: GIS

Labor: Energy resources

National Academy of Science: Hazards studies

National Aeronautics and Space Administration (NASA): Planetary research, Landsat 7 operations, Natural hazards, Earth Science research, Data management, Land Processes Distributed Active Archive, GIS, United Nations Environment Programme clearinghouse, Remote sensing

NASA/Jet Propulsion Lab: Spaceflight support

National Institutes of Health: Human health and environment

National Science Foundation: Hazards studies, Antarctic research and mapping, Global seismology

Smithsonian Institution: North American vertebrate collections

State: Natural hazards, Energy resources, Global seismology, Hydrologic data collection/studies

Tennessee Valley Authority: Hydrologic data collection/studies

Transportation/Federal Highway Administration: Hazards studies, Hydrologic data collection/studies

Transportation/Federal Aviation Administration: Volcano hazards

US Agency for International Development: Geologic hazards, Hydrologic data collection/studies, Energy resources, Atmospheric moisture index

State and Local Government

Airports: Volcanic hazards

American Indians/ Alaska Natives: K-12 educational resources, Streamgaging, Water quality/ quantity, Technical training and capability upgrade, Environmental hazards, Fisheries research, Invasive species

Civil Defense: Hazards mitigation

Departments of Natural Resources/ Geographic Information Councils: Volcanic hazards, Map data production, Hydrologic data collection/studies

Departments of Environmental Protection/Quality/ Health: Hydrologic data collection/studies

Departments of Fish and Game/Conservation Commission/Wildlife and Parks: Endangered species, Population dynamics, Habitat requirements, Fire management, Fisheries, Wildlife disease, Invasive species, Waterfowl surveys Bird banding, Aquaculture, GAP analysis

Offices of Emergency Management/ Services: Hazards monitoring and mitigation

Planning Commissions/Transportation/Engineering/Municipalities: Conservation plans, Hydrologic data collection/studies, Topographic mapping

State Geological Surveys/Depts of Mines and Geology: Geologic and topo mapping, Hazards assessment

Water Resources Authorities/Public Works/Sanitation: Contaminant Transport, Hydrologic data collection/studies

Nongovernment Organizations

American Farm Bureau/ American Society of Civil Engineers/Chemical Manufacturers Association/etc.: Coordination of hydrologic programs

American Red Cross: Hazards monitoring and mitigation

Electric Power Research Institute: Coal quality

FERC permittees/licensees: Hydrologic data collection/studies, Restoration of T&E migratory fish

Industry: Spatial data modeling, Spatial data browsing and retrieval, Product development and production, Environmental monitoring, Acid rain deposition program

The Nature Conservancy: Endangered species, Species at Risk, Ecological research, Biological Status/Trends, Coordination of hydrologic programs, GAP analysis

National Park and Conservation Association: Ecosystems assessments, Biological information

Universities/Cooperative Fish and Wildlife Research Units/State Water Resources Research Institutes: Planetary research, Space-based instrumentation, Natural science information delivery, Natural science research and applications, Hazards research, Training/education, Geologic mapping, Hydrologic data collection/studies, GAP analysis

Utilities: Seismic studies, Hydrologic data collection/studies

Woods Hole Oceanographic Institute: Marine research

The Public: Breeding bird survey, Bird banding, Water resources education/outreach

International

Global: Natural hazards support as requested

Africa: Ecological monitoring, Famine Early Warning System

Canada: Hydrologic data collection/studies, Scientific/technical cooperation

Central America: Hazards mitigation, Database development, GIS

China: Scientific/technical cooperation

International Civil Aviation Administration: Volcanic Hazards

International Organization for Standardization: Standards activities

Mexico: Border mapping, Habitat Restoration, Environmental Education, Water quantity/ quality, Landscape health, Fish species

United Arab Emirates: Hydrologic data collection/studies

United Nations: United Nations Environment Programme/Global Resources Information Database, Geographic names activities

3.3 MANAGEMENT ISSUES

The USGS has no problems that have been identified on the Inspector General's list of top ten management issues for FY 2000 or in GAO's *Major Management Challenges and Risks* (GAO/OCG-99-28). The USGS also has no significant management problems of a mission-critical nature that threaten the achievement of major performance goals.

3.4 DATA VERIFICATION AND VALIDATION

An Intranet-based performance reporting system was developed to track FY 1999 performance — source and procedures for collecting and verifying data were highlighted in Section II for each performance measure for each GPRA program activity. In general, program officers collected and verified performance data from program/project managers for the budget line items within their purview. Data received a final verification at the bureau level to ensure that reported components were discrete entities and that double counting did not occur, particularly in the more vulnerable areas such as integrated science investigations, for which several different line items supporting a single investigation could have resulted in counting by more than one program manager. USGS has not identified any serious data limitations — performance data for all FY 1999 measures were captured by a physical count by in-house sources rather than by sampling or by surveys of external entities outside of Federal control. For FY 2000 the new stream-gage measure will require automated sampling as described under the Hazards Data Verification and Validation section.

In addition to ongoing efforts to verify and validate performance data acquired for each performance measure, USGS under the current reorganization, is defining roles and responsibilities of Regional Directors (Eastern, Central and Western) and Associate Directors (for science disciplines and operations) with respect to ensuring that performance metrics for the Strategic Plan are collected, evaluated, and achieved at appropriate levels in the Bureau.

3.5 PROGRAM EVALUATIONS

Evaluations are a key part of USGS culture and are critical to maintaining the bureau's reputation for scientific excellence and credibility. We conduct both peer and management reviews to improve the accountability and quality of programs; identify and address gaps in programs; redirect or reaffirm program directions; identify and provide guidance for development of new programs; and reward and/or motivate managers and scientists. Reviews are both internal and external — conducted by USGS and non-USGS scientists, technicians, or specialists who are not involved in the specific proposal, project, program, or product under review. Our goal is to conduct an independent external peer review of ongoing programs about every five years, combined with more frequent independent internal management reviews. The following evaluations completed in FY 1999 influenced the revision of the Strategic Plan and contents of the performance measures and budget requests for FY 2000 and FY 2001. Program evaluations scheduled for FY 2000 and FY 2001 are listed in the revised Strategic Plan and will influence the content of the revised final FY 2001 Plan and FY 2002 Plans.

EXTERNAL TASK FORCE REVIEW OF THE USGS FEDERAL-STATE COOPERATIVE WATER PROGRAM

As part of the review, a survey was conducted concerning the timeliness and accuracy of water resource research products. Eighty-six percent of respondents stated that requests for data, reports, and information were handled promptly. Ninety-six percent of respondents stated that requests for data, reports, and information are answered accurately. Progress is being made to improve timeliness as evidenced by an improvement from a negative rating of 26 percent received from cooperators in the period from 1995-1997. The effort to improve continues and the Coop Program is capturing customer satisfaction data by soliciting feedback each time a report is delivered in fulfillment of an agreement between the USGS and that customer.

Program Evaluation	Scope and Methodology	Bureau Goal
Global Disaster Information Network:	External Review by National Academy of Public Administration (NAPA)	Hazards
Hydrologic Hazards	External Review by the National Research Council (NRC)	Hazards
Earthquake Hazards: The Advanced National Seismic System	Internal report prepared for Congress	Hazards
Landslide Hazards at USGS	Internal report prepared for Congress	Hazards
National Digital Orthophoto Program (NDOP)	Internal/External Review with multiple Federal agencies and National States Geographic Information Council	Hazards ENR
Strategic Directions for the USGS Water Resources Division	Internal Review	Hazards ENR
Streamgage Program	Internal review prepared for Congress	Hazards ENR
Coastal and Marine Geology Program	External Review by NRC	Hazards ENR
Gateway to the Earth Workshop	Internal/External Review by technical specialists from USGS, university and State governments	Hazards ENR
USGS Upper Midwest Environmental Sciences Centers	DOI Inspector General to support Corps of Engineer management requirements	ENR
Energy Resources Program	External Review by the NRC	ENR
National Cooperative Geologic Mapping	Internal/External Panel Federal Advisory Committee	ENR
Federal-State Cooperative Water Program	External Review by the NRC	ENR
Fisheries and Aquatic Resources Program	Internal/External Review	ENR
Geographic Information for the 21st Century	NAPA	ENR
Global Change Wetlands Program	Internal/External Review	ENR
Ground Water Resources Program	Internal report prepared for Congress	ENR
National Mapping Program Private Sector Relationships	Internal/External by senior management and private sector partners	ENR
South Florida Ecosystems Restoration	GAO Audit and Programmatic Evaluation	ENR
Biological Resource Status and Trends Program	Internal/External Review	ENR

ENR = Environment and Natural Resources

3.6 CAPITAL ASSETS/CAPITAL PROGRAMMING

USGS has prepared capital asset plans for two initiatives — Accessible Data Transfer and Hazard Support System.

Accessible Data Transfer

- Environment and Natural Resources GPR Program Activity: Accessible Data Transfer is the delivery mechanism that enables a large amount of data to be relayed quickly. This component supports the data infrastructure and long-term data collection efforts by creating a faster, more secure network with more capability to deliver a larger amount of data. This will

greatly improve the transfer and delivery of the 40 long-term databases from data collection sites at field offices to on-line archives and delivery of data and information products to customers across the Nation.

- Hazards GPR Program Activity: Accessible Data Transfer also supports the hazards monitoring networks by creating a faster more secure network with more capability to deliver a larger amount of data. This will greatly improve the transfer and delivery of hazards data and information products to customers across the Nation.

Hazard Support System

The Hazard Support System (HSS) is a prototype, satellite-based, wildland-fire detection system designed to provide 24-hour unclassified early warning of the outbreak of wildland fires while they are still only a few acres in size and easily suppressed. The system fuses sensor data in near real-time from the world's environmental weather satellites and the Nation's ballistic missile warning system, and from ancillary sources such as the national lightning detection network, fire-danger and fire-potential indices, and fire-fuel moisture and depth projections. When fully operational, the system has the potential to save tens to hundreds of millions of dollars annually in reduced Federal and State fire-suppression costs and saved timber, rangeland, and private property. The HSS is a joint development of the USGS, the National Reconnaissance Office (NRO), the National Oceanic and Atmospheric Administration (NOAA), and the Federal wildland-fire community, represented by the Bureau of Land Management and the U.S. Forest Service. The HSS together with the USGS Center for Integration of Natural Disaster Information comprise the integrated hazards monitoring network, one of the six hazards monitoring networks maintained under the Hazards GPRA Program Activity annual performance measure.

Information Technology Maintenance

Capital asset plans are also in place for ongoing information technology support efforts in earth science information management and delivery systems, geographic research and applications systems, seismic data acquisition system, U.S. national seismograph network, global seismograph network, mineral resource data system and national coal resources data system.

3.7 USE OF NON-FEDERAL PARTIES IN PREPARING THIS PLAN

The Annual Plan was prepared in conformance with *OMB Circular A-11 § 220.6*. The USGS did not engage non-Federal parties in preparing the Annual Performance Plan.

3.8 WAIVERS FOR MANAGERIAL ACCOUNTABILITY AND FLEXIBILITY

The USGS is requesting no waivers of administrative procedural requirements and controls.

Appendices

Appendix I

FY 1999 Annual Performance Report At-a-Glance

USGS GPRA Program Activities	Long-Term Goals	Annual Goal
<p>Hazards Provide science for a changing world focusing efforts in response to present and anticipated needs to predict and monitor hazardous events in near-real and real-time and to conduct risk assessments to mitigate loss.</p>	<p>Ensure the continued transfer of hazards-related data, risk assessments and disaster scenarios needed by our customers before, during and after natural disasters, and by 2005, increase the delivery of real-time hazards information by adding telemetry to 600 streamgages (thus reducing the time it takes to provide flood information at that site from 6 to 8 weeks to 4 hours) and installing 140 improved earthquake sensors (thus reducing delivery time of information on potentially damaging earthquakes from 40 to 20 minutes) to minimize loss of life and property.</p>	<p>Develop, maintain and improve monitoring networks and techniques of risk assessment by: maintaining the baseline of data and risk assessments transferred to customers; increasing by 100 sites streamgages with real-time capability, and increasing by 20 improved earthquake sensors to deliver real-time information on potentially damaging earthquakes to minimize loss of life and property.</p>
<p>Environment and Natural Resources Provide science for a changing world in response to present and anticipated needs to expand our understanding of environment and natural resource issues on regional, National, and global scales and enhance predictive/forecast modeling capabilities.</p>	<p>Ensure the continued availability of long-term environmental and natural resource information and systematic analysis and investigations needed by customers, and by 2005, develop 20 new decision support systems and predictive tools for informed decisionmaking about natural systems.</p>	<p>Provide and improve long-term environmental and natural resource information, systematic analysis and investigations, and predictive options for decisionmaking about natural systems by: providing essential information to address environmental and natural resources issues by maintaining 38 long-term data collection/data management efforts and supporting two large data infrastructures managed in partnership with others; delivering 843 new products from systematic analyses and investigations to our customers; improving and developing six new decision support systems and predictive tools for decisionmaking; and collaborating with university partners to understand natural systems and facilitate sound management practices through 272 external grants and contracts.</p>

Performance Measure	1999 Target	1999 Actual	Comments
Hazards monitoring networks maintained	6	6	
Risk assessments delivered	14	16	
Real-time streamgages (cumulative)	4,671	5,132	Measure will be replaced in FY 2000
Real-time earthquake sensors (cumulative)	120	120	
Stakeholder meetings	16	16	
Customer Satisfaction	Pilot	Pilot	
Long-term data collection and data management efforts maintained and improved, and large data infrastructures supported	40	40	
New products from systematic analyses and investigations delivered to customers	843	959	
Decision support systems or predictive models developed or improved and delivered to customers	6	7	
University-based partnerships for natural systems analysis	272	238	Subdivided fewer projects.
Stakeholder meetings	228	473	
Customer Satisfaction	Pilot	Pilot	

Appendix II

FY 2000 Annual Performance Plan At-a-Glance

Departmental Goal 4. Provide Science for a Changing World

USGS GPRA Program Activities	Long-Term Goals	Annual Goal
<p>Hazards Provide science for a changing world focusing efforts in response to present and anticipated needs to predict and monitor hazardous events in near-real and real-time and to conduct risk assessments to mitigate loss.</p>	<p>Ensure the continued transfer of hazards-related data, risk assessments and disaster scenarios needed by our customers before, during and after natural disasters, and by 2005, increase the delivery of real-time hazards information by increasing the quarterly average number of gages reporting real-time data on the Internet to 5,500 (thus reducing the time it takes to provide flood information at that site from 6 to 8 weeks to 4 hours) and installing 500 improved earthquake sensors (thus reducing delivery time of information on potentially damaging earthquakes from 40 to 20 minutes) to minimize loss of life and property.</p>	<p>Develop, maintain and improve monitoring networks and techniques of risk assessment by: maintaining the baseline of data and risk assessments transferred to customers; increasing by 200 (to 4,700) the quarterly average number of streamgages delivering real-time data on the Internet, and increasing by 80 improved earthquake sensors to deliver real-time information on potentially damaging earthquakes to minimize loss of life and property.</p>
<p>Environment and Natural Resources Provide science for a changing world in response to present and anticipated needs to expand our understanding of environment and natural resource issues on regional, National and global scales and enhance predictive/forecast modeling capabilities.</p>	<p>Ensure the continued availability of long-term environmental and natural resource information and systematic analysis and investigations needed by customers, and by 2005, develop 20 new decision support systems and predictive tools for informed decisionmaking about natural systems.</p>	<p>Provide and improve long-term environmental and natural resource information, systematic analysis and investigations and predictive options for decisionmaking about natural systems by: providing essential information to address environmental and natural resources issues by maintaining 44 long-term data collection/data management efforts and supporting two large data infrastructures managed in partnership with others; delivering 995 new products from systematic analyses and investigations to our customers; improving and developing six new decision support systems and predictive tools for decisionmaking; and collaborating with university partners to understand natural systems and facilitate sound management practices through 248 external grants and contracts.</p>

Performance Measure	2000 Target	2000 Actual	Comments
Hazards monitoring networks maintained	6		
Risk assessments delivered	10		
Real-time streamgages on the Internet (quarterly avg)	4,700		Measure replaces "Real-time streamgages (cumulative)"
Real-time earthquake sensors (cumulative)	200		
Stakeholder meetings	13		
Customer Satisfaction	Baseline		
Long-term data collection and data management efforts maintained and improved, and large data infrastructures supported	46		
New products from systematic analyses and investigations delivered to customers	995		
Decision support systems or predictive models developed or improved and delivered to customers	6		
University-based partnerships for natural systems analysis	248		
Stakeholder meetings	438		
Customer Satisfaction	Baseline		

FY 2000 Revised Final Budget Table

Budget Activity/ Subactivity (\$000)	FY 1999 Enacted Approp less rescission			FY 2000 Request			FY 2000 Enacted Approp less reductions		
	Total	Hazards	Env & Nat Res	Total	Hazards	Env & Nat Res	Total	Hazards	Env & Nat Res
National Mapping Program	138,148	6,015	132,133	135,434	13,793	121,641	126,717	7,950	118,767
Mapping Data Collection and Integration	63,691	0	63,691	58,125	0	58,125	56,330	5,250	51,080
Earth Science Info Management and Delivery	36,388	4,555	31,833	43,700	11,999	31,701	34,270	1,250	33,020
Geog Research and Applications	38,069	1,460	36,609	33,609	1,794	31,815	36,117	1,450	34,667
Geologic Hazards, Resources, and Processes	238,659	93,297	145,362	198,617	82,083	116,534	211,222	84,108	127,114
Geologic Hazard Assessments	76,237	76,237	0	68,810	68,810	0	69,111	69,111	0
Geologic Landscape and Coastal Assessments	73,935	17,060	56,875	60,701	13,273	47,428	65,435	14,997	50,438
Geologic Resource Assessment	88,487	0	88,487	69,106	0	69,106	76,676	0	76,676
Water Resources Investigations	208,542	12,764	195,778	172,506	16,985	155,521	185,819	14,764	171,055
Water Resources Assessment and Research	103,991	0	103,991	88,298	0	88,298	91,037	0	91,037
Water Data Collection and Management	29,359	2,190	27,169	20,790	5,116	15,674	29,167	4,190	24,977
Fed-State Coop Water Program	70,137	10,574	59,563	58,356	11,869	46,487	60,553	10,574	49,979
Water Resources Research Act Program	5,055	0	5,055	5,062	0	5,062	5,062	0	5,062
Biological Research	162,187	0	162,187	124,964	0	124,964	136,896	0	136,896
Biological Research and Monitoring	138,247	0	138,247	97,734	0	97,734	113,232	0	113,232
Bio Info Management and Delivery	11,443	0	11,443	14,550	0	14,550	10,484	0	10,484
Cooperative Research Units	12,497	0	12,497	12,680	0	12,680	13,180	0	13,180
Integrated Science	N/A	N/A	N/A	47,686	0	47,686	N/A	N/A	N/A
Programmatic Total	747,536	112,076	635,460	679,207	112,861	566,346	660,654	106,822	553,832
General Administration/ Science Support (prorated)	27,204	4,081	23,123	73,996	12,283	61,713	67,104	10,737	56,367
Facilities (prorated)	21,501	3,225	18,276	85,282	14,157	71,125	85,618	13,699	71,919
SIR Appropriations Total (not including supplementals)	796,241	119,382	676,859	838,485	139,301	699,184	813,376	131,258	682,118

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